

Claims

1. A light diode arrangement with a reflector, comprising a sub-mount on which a light-emitting diode chip is mounted, and a reflector aligned at the sub-mount and which comprises a reflector surface located in the beam path of the light-emitting diode chip, characterized in that the sub-mount (1) comprises a blind hole (2) into which the light-emitting diode chip (3) is inserted and comprises a paraboloidal reflector surface (7) above the blind hole (2) in whose focal point or focal line the center of the surface of the light-emitting diode chip (3) is located, the reflector is formed by a solid body (8, 8a, 8b, 8c) formed of a transparent material and comprising a small irradiation surface opposing the light-emitting diode chip (3) and a large radiation surface (11, 11a) opposing same at a distance, between which a lateral surface forming the reflector surface (10) extends, and that the sub-mount comprises an opening above the blind hole (2) into which the reflector body (8) is inserted with the radiation surface first so that its reflector surface forms a continuation of the reflector surface (7) of the sub-mount.
2. A light-emitting diode arrangement as claimed in claim 1, characterized in that the reflector body (8) is a rotational-symmetric body in whose axis the LED chip (3) is arranged.
3. A light-emitting diode arrangement as claimed in claim 2, characterized in that the reflector surfaces (7, 10) of the sub-mount (1) and the reflector body (8) are each formed paraboloidal.
4. A light-emitting diode arrangement as claimed in one of the preceding claims, characterized in that the reflector body (8) is held by a ferrule centered on the sub-mount (1).
5. A light-emitting diode arrangement as claimed in claim 1, characterized in that the reflector surface of the reflector body (8c) is formed by four lateral surfaces (15) adjoining one another, from which at least two opposing lateral surfaces (15) generate a paraboloidal intersecting line on a plane vertically intersecting the lateral surfaces and the LED chip (3), wherein the four lateral surfaces (15) and planes

vertically intersecting said plane form lines of intersection which perpendicularly intersect one another.

6. A light-emitting diode arrangement as claimed in claim 5, characterized in that said two paraboloidally formed lateral surfaces (15) of the reflector body (8a) have an extension transversely to the paraboloidal extension that is much larger than the respective dimensions of the other lateral surfaces of the reflector body (8a) and that the incident surface of the reflector body (8a) is opposed by a plurality of adjoining LED chips that are held on the reflector body (8a) by means of their sub-mounts.
7. A light-emitting diode arrangement as claimed in claim 4, characterized in that the reflector body (8b) is a circular disc or a sector of a disc that has a circular opening (16) in the center, said opening being delimited by an irradiation surface, and the disc or the disc sector has an outer periphery that is delimited by a radiation surface (11b), wherein the irradiation surface and the radiation surface (11b) have cylinder surfaces being axially parallel, and the lateral surfaces connecting same form paraboloidal lines of intersection with an axial intersecting plane, that approach one another in the direction towards the center of the disc or disc sector, and that the irradiation surface is opposed by a plurality of adjoining, star-like aligned LED chips that are held on the reflector body (8b) by means of their sub-mounts (1).
8. A light-emitting diode arrangement as claimed in one of the preceding claims, characterized in that the reflector surfaces (10, 15) of the reflector body (8, 8a, 8b, 8c) are polished.
9. A light-emitting diode arrangement as claimed in one of the preceding claims, characterized in that the gap between the LED chip (3) and the irradiation surface of the reflector body (8, 8a, 8b, 8c) is filled with a transparent, cured liquid plastic (9).